We Claim:

1   1.   A machine readable medium that provides instructions, which when executed by a

2   set of processors, cause said set of processors to perform operations comprising:

3   receiving a packet on a circuit; and

4   provisioning the circuit in response to receiving the packet.

1   2.   The machine readable medium of claim 1, wherein the circuit is associated with a

2   listening circuit structure before the packet is received on the circuit, and the circuit is

3   disassociated from the listening circuit structure after the packet is received on the circuit.

1   3.   The machine readable medium of claim 1, wherein provisioning the circuit

2   comprises:

3   identifying the circuit;

4   creating a provisioned circuit structure for the circuit; and

5   associating the circuit to the provisioned circuit structure.

1   4.   The machine readable medium of claim 3 wherein creating the provisioned circuit

2   structure comprises:

3   retrieving a set of parameters corresponding to the circuit from a database; and

4   populating an empty circuit structure with the set of parameters.

1   5.   The machine readable medium of claim 1 further comprising unprovisioning the

2   circuit upon a subscriber ending event.

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1   6.   A machine readable medium that provides instructions, which when executed by a

2   set of processors, cause said set of processors to perform operations comprising:

3   configuring a set of circuit as listening circuits;

4   receiving a packet on one of the set of listening circuits;

5   provisioning the one of the set of listening circuits in response to receiving the

6   packet; and

7   processing a set of subsequent packets received on the provisioned one.

1   7.   The machine readable medium of claim 6, wherein provisioning the one of the set

2   of listening circuits comprises:

3   retrieving a set of parameters for the one of the set of listening circuits from a

4   database; and

5   provisioning the one of the set of listening circuits with the set of parameters.

1   8.   The machine readable medium of claim 6, wherein configuring the set of circuits

2   as listening circuits comprises associating the set of listening circuits to a single circuit

3   structure, this single circuit structure being a circuit structure having an indicator

4   indicating the circuit structure as a listening circuit structure.

1   9.   The machine readable medium of claim 6 further comprising unprovisioning the

2   provisioned one in response to a subscriber ending event.

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1   10.   A machine readable medium that provides instructions, which when executed by a

2   set of processors, cause said set of processors to perform operations comprising:

3   listening for a packet over a set of configured circuits;

4   receiving the packet on one of the set of configured circuits;

5   identifying the one of the set of configured circuits;

6   signaling a routine that the packet has been detected on the one of the set of

7   configured circuits;

8   retrieving a set of parameters for the one of the set of configured circuits from a

9   database;

10   creating an empty circuit structure for the one of the set of configured circuits;

11   populating the empty circuit structure with the set of parameters, the populated

12   empty circuit structure becoming a provisioned circuit structure; and

13   associating a set of subsequent packets received on the one of the set of listening

14   circuits with the provisioned circuit structure.

1   11.   The machine readable medium of claim 10, wherein listening for the packet over

2   the set of configured circuits comprises associating the set of configured circuits to a

3   listening circuit structure.

1   12.   The machine readable medium of claim 10, wherein signaling the routine

2   comprises passing the routine the listening circuit structure, the listening circuit structure

3   identifying the one of the set of configured circuits.

1   13.   The machine readable medium of claim 10, wherein the database can be a remote

2   database or a local database.

1   14.   The machine readable medium of claim 10 further comprising releasing the

2   provisioned circuit structure and listening for a new packet over the one of the set of

3   configured circuits in response to a subscriber ending event.

1   15.   A machine readable medium that provides instructions, which when executed by a

2   set of processors, cause said set of processors to perform operations comprising:

3   indicating a circuit structure as a listening circuit structure;

4   associating a set of configured circuits with the listening circuit structure;

5   receiving a packet on one circuit of the set of configured circuits;

6   provisioning the one circuit in response to receiving the packet; and

7   accepting a set of subsequent packets received on the provisioned circuit.

1   16.   The machine readable medium of claim 15 further comprising discarding a set of

2   packets transmitted over an unconfigured circuit, the unconfigured circuit not being

3   associated with the listening circuit structure.

1   17.   The machine readable medium of claim 15, wherein provisioning the one circuit

2   comprises:

3   identifying the one circuit with a circuit handle;

4   retrieving a set of parameters corresponding to the circuit handle from a database;

5   creating an empty circuit structure; and

6   populating the empty circuit structure with the set of parameters.

1   18.   The machine readable medium of claim 17, wherein the database can be a local

2   database or a remote database.

1   19.   The machine readable medium of claim 15 further comprising unprovisioning the

2   one circuit and indicating the one circuit as the listening circuit structure in response to a

3   subscriber ending event.

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1   20.   A network element comprising:

2   a network card having a port to couple a set of circuits; and

3   a computer coupled to the network card, the computer to provision one circuit of

4   the set of circuits in response to receiving a packet on the one circuit.

1   21.   The network element of claim 20 further comprising a remote database to store

2   parameters for provisioning the one circuit.

1   22.   The network element of claim 20, wherein the computer comprises:

2   a database to store a set of parameters;

3   a memory element to store a listening circuit structure and a set of provisioned

4   circuit structures; and

5   an operating system to associate a set of the set of circuits with the listening

6   circuit structure, and to provision the one circuit.

1   23.   The network element of claim 22 wherein to provision the one circuit comprises:

2   to identify the one circuit;

3   to disassociate the one circuit from the listening circuit structure;

4   to create an empty circuit structure;

5   to populate the empty circuit structure with the set of configuration parameters,

6   making the empty circuit structure a provisioned circuit structure; and

7   to associate the one circuit to the provisioned circuit structure.

1   24.   The network element of a claim 20 further comprising the computer to

2   unprovision one circuit of the set of circuits in response to a subscriber ending event.

1   25.   An apparatus comprising:

2   a port to couple a set of circuits;

3   a memory element to store a listening circuit structure and a set of provisioned

4   circuit structures;

5   a database to store a set of parameters for a subset of the set of circuits; and

6   a computer to provision one of the subset of circuits.
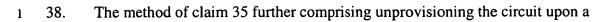
1   26.   The apparatus of claim 25, wherein the database can be a local or remote

2   database.

1   27.   The apparatus of claim 25, wherein the computer to provision the one of the set of

2   circuits comprises:

3   retrieving the set of parameters corresponding to the one circuit from the

4   database;

5   creating an empty circuit structure for the one circuit, and

6   populating the empty circuit structure with the set of configuration parameters.

1   28.   The apparatus of claim 25, wherein the computer provisions one of the subset of

2   circuits in response to a packet being detected on the one circuit.

1   29.   The apparatus of claim 25 further comprising unprovisioning the one of the subset

2   of circuits in response to a subscriber ending event.

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1   30.   An apparatus comprising:

2   a port to couple a set of circuits;

3   a memory element to store a set of circuit structures;

4   a storage to store a set of parameters; and

5   a computer to provision one circuit of the set of circuits in response to a packet

6   being received on the one circuit.

1   31.   The apparatus of claim 30, wherein one of the set of circuit structures is a

2   listening circuit structure.

1   32.   The apparatus of claim 30, wherein the storage can be a local or remote storage.

1   33.   The apparatus of claim 30, wherein the computer to provision one circuit of the

2   set of circuits comprises:

3   to identify the one circuit;

4   to retrieve the set of parameters corresponding to the identified one circuit from

5   the storage;

6   to create an empty circuit structure for the one circuit, and

7   to populate the empty circuit structure with the set of parameters.

1   34.   The apparatus of claim 30 further comprising unprovisioning the one circuit of the

2   set of circuits in response to a subscriber ending event.

1   35.   A computer implemented method comprising:

2   receiving a packet on a circuit; and

3   provisioning the circuit in response to receiving the packet.

1   36.   The method of claim 35, wherein the circuit is associated with a listening circuit

2   structure before the packet is received on the circuit, and the circuit is disassociated from

3   the listening circuit structure after the packet is received on the circuit.

1   37.   The method of claim 35, wherein provisioning the circuit comprises:

2   identifying the circuit;

3   creating a provisioned circuit structure for the circuit; and

4   associating the circuit to the provisioned circuit structure.

1 38.   The method of claim 35 further comprising unprovisioning the circuit upon a

2 subscriber ending event.

1 39.   The method of claim 37 wherein creating the provisioned circuit structure

2 comprises:

3   retrieving a set of parameters corresponding to the circuit from a database; and

4   populating an empty circuit structure with the set of parameters.